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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/507,481

09/13/2004

Kazutaka Hara

042778

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07/19/2006

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EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/507,481

Applicant(s)

HARA, KAZUTAKA

Examiner

Tarifur R. Chowdhury

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-17 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 10-14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tei et al., (Tei), JP 21001-124918 in view of Yojiro et al., (Yojiro), JP 06-301030.**

3. Tei discloses and shows in Fig. 5, a backlight used for a liquid crystal display device, comprising:

- a liquid crystal cell ;
- a bandpass filter; and
- a backlight (31) that uses three-wavelength emission type fluorescent lamp.

Tei differs from the claimed invention because he does not explicitly disclose that the bandpass filter selectively allows blue light having a center wavelength in a range of 400-440 nm, green light having a center wavelength in a range of 520-530 nm and red light having a center wavelength in a range of 620-640 nm, respectively, to pass therethrough.

Yojiro discloses a liquid crystal display device equipped with a bandpass filter that transmits blue light having a center wavelength of approximately 460 nm, green light having a center wavelength of approximately 540 nm and red light having a center

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wavelength of approximately 630 nm. He also discloses that such a filter raise color purity and thus raises the brightness of an image. Further, it is also known in the art that if the center wavelength is correctly chosen the transmitted light maintains a good white color balance.

Yojiro is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use bandpass filter that transmits blue light having a center wavelength in a range of 400-440 nm, green light having a center wavelength of 520-530 nm and red light having a center wavelength of 610-640 nm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Tei by using a bandpass filter that transmits blue light having a center wavelength in a range of 400-440 nm, green light having a center wavelength in a range of 520-530 nm and red light having a center wavelength in a range of 610-640 nm for advantages such as maintaining a good white color balance for the transmitted light and thus improved image brightness.

Accordingly, claims 1 and 16 would have been obvious.

As to claim 10, using a bandpass filter that comprises a multilayer lamination of resin films respectively having different refractive indexes is known in the art and thus would have been obvious to improve surface roughness.

As to claims 11-14, the multilayer lamination of the resin films being formed through film deposition or multilayer extrusion and then stretching are considered as product by process limitations and thus does not further limit the structure of the claimed bandpass filter. "Even though product-by-process claims are limited by and defined by

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the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, the process limitation does not have patentable weight. See MPEP 2113.

As to claim 17, employing a diffusing plate between the backlight and the liquid crystal cell to obtain uniform light distribution is known in the art and thus would have been obvious.

**4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tie and Yojiro and further in view of Keiji et al., (Keiji), EP 0 864 905 A.**

5. Tie when modified by Yojiro differ from the claimed invention because they do not explicitly disclose the claimed prism sheet.

Keiji discloses a backlight device equipped with a prism sheet used for a liquid crystal display device. He also discloses (col. 3, lines 10-13) that the use of prism sheet improve the light usage efficiency of the light source.

Keiji is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a prism sheet.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ a prism sheet between the light source and the bandpass filter for advantages such as improved light usage efficient of the light source, as per the teachings of Keiji.

Accordingly, claim 2 would have been obvious.

**6. Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tei and Yojiro and further in view of Hikmet et al., (Hikmet), USPAT 6,307,604.**

7. Tei when modified by Yojiro differ from the claimed invention because they do not explicitly disclose that the bandpass filter is formed by using cholesteric liquid crystal.

Hikmet discloses liquid crystal display devices equipped with bandpass filters that are formed using cholesteric liquid crystals. He also discloses using bandpass filter that is formed by laminating together cholesteric liquid crystal layers that respectively reflect circularly polarized light of the opposite circular polarizations. He further discloses that using a light source in conjunction with filters consists of at least one cholesteric liquid crystal layer provides low light losses (Col. 1, lines 25-27).

Hikmet is evidence that ordinary workers in the art would find a reason, suggestion or motivation to form bandpass filters using at least one cholesteric liquid crystal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use bandpass filters that is made of at least one cholesteric liquid crystal for advantages such as low light loss, as per the teachings of Hikmet.

Accordingly, claims 3 and 8 would have been obvious.

As to claim 4, employing a reflection polarizer closed to the light source to increase the amount of light passing through the bandpass filter is known in the art and thus would have been obvious.

As to claims 5-7 and 9, even though Hikmet is silent about having a half wavelength plate between the cholesteric liquid crystal layers, it is known in the art to employ a half wavelength plate made of liquid crystal polymer between the cholesteric liquid crystal layers for making it possible to use cholesteric filters having all the same handedness and thus would have been obvious.

**8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tei and Yojiro and further in view of Fukushima, USPAT 6,666,944.**

9. Tei when modified by Yojiro differ from the claimed invention because they do not explicitly disclose that the bandpass filter comprises a multilayer lamination of dielectric films respectively having different refractive indexes.

Fukushima discloses (col. 2, lines 1-6; col. 4, lines 1-15) a bandpass filter comprising a multilayer lamination of dielectric films respectively having refractive indexes. He further discloses that such a filter realizes flat transmission characteristics and superior cutoff characteristic relative to adjacent bands.

Fukushima is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use bandpass filter that comprises a multilayer lamination of dielectric films respectively having different refractive indexes.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention was made to use a bandpass filter that comprises a multilayer lamination of dielectric films respectively having different refractive indexes so that a filter having flat transmission characteristic and superior cutoff characteristic is obtained, as per the teachings of Fukushima.

***Response to Arguments***

10. Applicant's arguments filed on April 24, 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that Yojiro fails to disclose the claimed range for the center wavelengths, applicant's attention is respectfully requested to the rejection above.

In response to applicant's argument regarding claim 4, it is respectfully pointed out to applicant that Hikmet was used to find a teaching for using a bandpass filter that is formed by using cholesteric liquid crystals not to find a teaching whether a common cholesteric polarizer is used on the backlight side or a lamination of cholesteric layers are adapted to each color.

Therefore, the rejection was proper and thus maintained.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

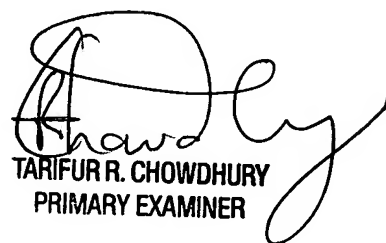
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nelms C. David can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TRC  
June 29, 2006



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER